REMARKS

This Application has been carefully reviewed in light of the Office Action mailed January 6, 2009. At the time of the Office Action, claims 1-20 were pending in this patent application. Claims 11-20 were allowed and claims 1-10 were rejected. Of the rejected claims, claim 1 is the only independent claim.

Claims 1 and 5 have been amended for the purpose of clarity. Support for the amendments can be found at least in paragraph [0124] of the Specification. Claim 2 has been rewritten in independent form and includes all of the limitations of the original claim 1. The fee for the additional independent claim is included herewith. No new matter has been added. Applicants respectfully request reconsideration and favorable action in this case.

I.   Rejections under 35 U.S.C. § 101

Claims 1-4 and 6-10 stand rejected under 35 U.S.C. § 101 as allegedly failing to meet the requirements of 35 U.S.C. § 101. In the Office Action, the Examiner asserts that the claimed configuration system is software per se. Applicants respectfully disagree. Nonetheless, in order to expedite prosecution, claims 1 and 2 have been amended specifically to recite that the configuration database is stored in a computer readable memory, which is a physical entity. As such, claims 1 and 2 do not recite software per se. Accordingly, Applicants respectfully request that this rejection be withdrawn.

Furthermore, because claim 2 was only rejected under 35 U.S.C. § 101, the newly-independent claim 2, which recites a physical entity (a computer readable memory) and, thus, does not recite software per se, is allowable.

II.   Rejections under 35 U.S.C. § 102

Claims 1 and 7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 5,408,412 to Hogg et. al. ("Hogg"). Applicants respectfully traverse this rejection, and the assertions and determinations therein, for at least the following reasons.

Amended claim 1 recites a configuration system for configuring a process control system of a process plant. The configuration system includes, in part, a set of expert rules (stored in a configuration database) associated with a process module representing a logical unit in the process plant. The process module includes multiple process objects that represent physical entities in the process plant and provide data associated with those entities, and the expert rules reference the data provided by the process objects to detect abnormal situations associated with the logical unit.

Accordingly, the claimed configuration system enables a user to define a set of rules for an expert engine to be used to detect abnormal situations in a plant at a level of logical units rather than at the specific devices within the plant. The claimed configuration system thus enables the expert engine to easily obtain the proper data within the operating plant, as this data is illustrated by and accessible through the process objects of the process module. Associating expert rules with process modules generally leads to a more efficient data processing and data collection environment within a process plant, in which the expert engine can easily obtain the data it needs to detect abnormal situations associated with the individual or multiple devices while the user may simultaneously view what is going on within in the plant with respect to the detection of those abnormal situations.

Hogg describes a diagnostic system for use in troubleshooting malfunctions in an aircraft engine control system. The diagnostic system described in Hogg uses an expert system to apply rules to analyze signals from various sensors and to guide a technician through troubleshooting the malfunctions in the aircraft engine control system. However, nothing in Hogg teaches or suggests associating these rules with any sort of specific process modules that represent logical units in the aircraft, let alone that these rules reference data provided by the plurality of process objects of the process module, as required by claim 1. On the contrary, Hogg explicitly describes associating rules with individual sensor signal values. *See,* e.g., col. 3, lines 3-9 and col. 15, lines 29-32. As a result, just like conventional process control systems described in paragraph [0124] of the Specification, the diagnostic system described in Hogg requires that a technician manually provide the appropriate data (e.g., sensor signal values) to the expert systems. Consequently, the expert system in Hogg is hard to set up and use and takes longer to run.

By contrast, the configuration system of claim 1, which includes a set of expert rules associated with a process module representing a logical unit in the process plant can, for example, automatically detect abnormal situations associated with the logical unit with limited or no operator involvement. Because the set of expert rules is associated with the process module, the claimed process module eliminates the need for a user (e.g., an operator) to manually determine and/or provide the necessary data to the expert system. Furthermore, because the set of rules in the claimed system are associated with a specific process module, the rules themselves may be easier to create, e.g., because they may not be required to account for interaction between unrelated function blocks. For at least these reasons, claim 1 and its dependent claim 7 are not anticipated by Hogg.

III.   Rejections under 35 U.S.C. § 103

Claims 1 and 4-8

Claims 1 and 4-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pub. No. 2002/0022894 to Eryurek et. al. ("Eryurek") in view of U.S. Pat. No. 4,985,857 to Bajpai ("Bajpai). Applicants respectfully traverse this rejection, and the assertions and determinations therein, for at least the following reasons.

Amended claim 1 recites a configuration system for configuring a process control system of a process plant. The configuration system includes, in part, a set of expert rules (stored in a configuration database) associated with a process module representing a logical unit in the process plant. The process module includes multiple process objects that represent physical entities in the process plant and provide data associated with those entities, and the expert rules reference the data provided by the process objects to detect abnormal situations associated with the logical unit.

Accordingly, the claimed configuration system enables a user to define a set of rules for an expert engine to be used to detect abnormal situations in a plant at a level of logical units rather than at the specific devices within the plant. The claimed configuration system thus enables the expert engine to easily obtain the proper data within the operating plant, as this data is illustrated by and accessible through the process objects of the process module.

Associating expert rules with process modules generally leads to a more efficient data processing and data collection environment within a process plant, in which the expert engine can easily obtain the data it needs to detect abnormal situations associated with the individual or multiple devices while the user may simultaneously view what is going on within in the plant with respect to the detection of those abnormal situations.

The Examiner acknowledges that Eryurek does not disclose a set of expert rules associated with a process module, but the Examiner asserts that this feature is disclosed in Bajpai. Applicants respectfully disagree with the Examiner.

While Bajpai describes a general purpose expert system for diagnosing machines that includes general rules, nothing in Bajpai teaches or suggests associating these rules with any sort of specific process modules that represent logical units in the plant, let alone that these rules reference data associated with the corresponding physical entities provided by the plurality of processes objects of the process module, as required by claim 1. Instead, Bajpai's rules are based on machine information and vibration data collected by a mechanic. *See*, e.g., col. 2, lines 12-17. As a result, just like conventional process control systems described in paragraph [0124] of the Specification, the diagnostic system described in Bajpai requires that a mechanic manually provide the appropriate data (e.g., vibration data) to the expert system. Consequently, the expert system in Bajpai is hard to set up and use and takes longer to run.

By contrast, the configuration system of claim 1, which includes a set of expert rules associated with a process module representing a logical unit in the process plant can, for example, automatically obtain the necessary data to detect abnormal situations associated with the logical unit with limited or no operator involvement. Because the set of expert rules is associated with the process module, the claimed process module eliminates the need for a user (e.g., an operator) to manually determine and/or provide the necessary data to the expert system. Furthermore, because the set of rules in the claimed system is associated with a specific process module, the rules themselves may be easier to create, e.g., because they may not be required to account for interaction between unrelated function blocks. For at least these reasons, claim 1 and its dependent claims 4-8 are not anticipated by Bajpai.

Claim 3

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Eryurek in view of Bajpai, and further in view of U.S. Pat. No. 6,445,963 to Blevins ("Blevins"). Applicants respectfully traverse this rejection, and the assertions and determinations therein, for at least the following reason.

Claim 3 depends from claim 1, which recites a set of expert rules associated with a process module. As explained in reference to claim 1, Eryurek and Bajpai, alone or in combination, do not teach or suggest this feature. Blevins does not cure the deficiencies of Eryurek and Bajpai, because nothing in Blevins teaches or suggests associating a set of expert rules with a process module, and neither is Blevins used for that purpose in the Office Action. Accordingly, claim 3 is allowable.

Claims 9-10

Claims 9-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eryurek in view of Bajpai, and further in view of U.S. Pub. No. 2003/0028269 to Spriggs ("Spriggs"). Applicants respectfully traverse this rejection, and the assertions and determinations therein, for at least the following reason.

Claims 9-10 depend from claim 1, which recites a set of expert rules associated with a process module. As explained in reference to claim 1, Eryurek and Bajpai, alone or in combination, do not teach or suggest this feature. Spriggs does not cure the deficiencies of Eryurek and Bajpai, because nothing in Spriggs teaches or suggests associating a set of expert rules with a process module, and neither is Spriggs used for that purpose. Accordingly, claims 9-10 are allowable.

Conclusion

Applicants have now made an earnest attempt to place this case in condition for immediate allowance. For the foregoing reasons, Applicants respectfully request reconsideration and allowance of claims 1-20. If there is any matter that the Examiner would like to discuss, the Examiner is invited to contact the undersigned representative at the telephone number set forth below.

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Respectfully submitted,

By: _____

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